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| 10/693,849 | 10/17/2003 | James M. Quigley | 84,605 | 2816 |

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EXAMINER

LUKS, JEREMY AUSTIN

| ART UNIT | PAPER NUMBER |
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2837

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Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 and 5-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Shiery (5,732,741) in view of Bychinsky (3,966,015).

With respect to Claim 1, 7, Shiery teaches an outer casing (Figure 1, #12) enclosing a flow chamber (22) between opposite axial ends thereof through which the fluid is conducted; an inner cylindrical support (80) drum positioned within the outer casing (12) and surrounding the flow chamber (22) configured to allow undiverted fluid flow in an axial direction through the flow chamber (22); a hole (80) in the inner cylindrical support drum (80), wherein the hole (88) is aligned in a direction parallel to the axial direction of fluid flow in the flow chamber (22); flexible means (14) positioned within the outer casing (12) and surrounding the cylindrical support drum (80) for exposure to the fluid within the flow chamber (22) through the hole (88) in the inner cylindrical support drum (80), wherein the flexible means (14) covers the hole (88) to form a barrier that prevents fluid from flowing through the hole (88); and gas cavity means (20) enclosed within the outer casing (12) through which the flexible means (14) is exposed to pressurized gas in opposition to said exposure to the fluid in the flow

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chamber (22) (Col. 4, Lines 1-6). Shiery fails to teach a plurality of axial sections positioned within the outer casing and surrounding the inner cylindrical support drum, wherein: at least a portion of each axial section is exposed to fluid in the flow chamber through an associated hole in the inner cylindrical support drum; each axial section is separated from an adjacent axial section by a connector plate; each axial section has a length and radial dimension that differs from a length and radial dimension of each of the other axial sections. Bychinsky teaches a plurality of axial sections (Figure 1, #46, 74, 94, 114, 130) positioned within an outer casing and surrounding the inner cylindrical support drum when combined with Shiery, wherein: at least a portion of each axial section (46, 74, 94, 114, 130) is exposed to fluid in the flow chamber through an associated hole in the inner cylindrical support drum when combined with Shiery; each axial section is separated from an adjacent axial section by a connector plate (Figure 2, #48); each axial section has a length and radial dimension that differs from a length and radial dimension of each of the other axial sections (See Figure 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Shiery with the apparatus of Bychinsky in order to attenuate a plurality of frequency bands within the muffler.

With respect to Claim 5, Shiery teaches a cylindrical rubber layer (Figure 1, #14) (Col. 2, Lines 29-34); wherein said hole (88) in the inner cylindrical support drum (80) comprises slanted holes (88) on which the rubber layer (14) is positioned under said exposure to the fluid within the flow chamber (22) through the slanted holes (88).

With respect to Claim 6, Shiery and Bychinsky are relied upon for the reasons and disclosures set forth above. Shiery and Bychinsky fail to teach each rubber layer associated with one axial section having a thickness that differs from a thickness of each of the other rubber layers associated with each of the other axial sections. It would have been an obvious matter of design choice to provide each rubber layer with a thickness that differs from a thickness of each of the other rubber layers to attenuate multiple frequency bands, since such modification would have involved a mere change in size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955)

With respect to Claim 8, the combination of Shiery and Bychinsky will give each gas cavity (Shiery, Figure 1, #20) means a volume that differs from a volume of each of the other gas cavity means (20) due to the differing dimensions of the axial section (Bychinsky, Figure 1, #46, 74, 94, 114, 130) housed within the gas cavities (Shiery, Figure 1, #20). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Shiery with the apparatus of Bychinsky in order to attenuate a plurality of frequency bands within the muffler.

With respect to Claim 9, Shiery teaches wherein each gas cavity means (Figure 1, #20) includes a selectively controlled valve means (28) for equalizing a pressure in the gas cavity means (20) with a pressure of the fluid in the flow chamber (22) (Col. 4, Lines 1-6)

With respect to Claims 10 and 11, Shiery is relied upon for the reasons and disclosures set forth above. Shiery further teaches a portion of a flexible means (Figure 1, #14) is exposed to pressurized gas through a hole (88) in the outer cylindrical drum (12). Shiery fails to teach wherein each axial section further comprises an outer cylindrical support drum comprising a hole and located opposite the inner components. Bychinsky teaches wherein each axial section further comprises an outer cylindrical support drum (Figure 1, #40) comprising a hole (20) and located opposite the inner components. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Shiery with the apparatus of Bychinsky in order to attenuate a plurality of frequency bands within the muffler.

Response to Arguments

2. Applicant's arguments with respect to claims 1 and 5-11 have been considered but are moot in view of the new ground(s) of rejection. The Examiner considers the combination of Shiery and Bychinsky to teach all of the limitations as claimed.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent arts of record relating to acoustic noise filters are disclosed in the PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Luks whose telephone number is

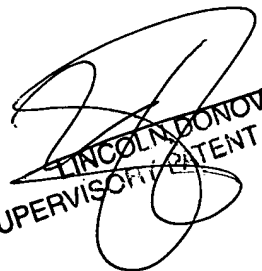
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(571) 272-2707. The examiner can normally be reached on Monday-Thursday 8:30-6:00, and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jeremy Luks
Patent Examiner
Art Unit 2837
Class 181



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